AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0002] with the following:

The present invention relates to a micro-dialysis probe having a supply line and a drainage line for a drip-feed solution and a dialysis section positioned generally therebetween ~~in accordance with the preamble of claim 1~~. More specifically, the present invention relates to a micro-dialysis probe wherein solution flowing from the supply line to the drainage line experiences an inversion in flow in the area of the dialysis section.

Please replace paragraph [0007] with the following:

The present invention relates to a dialysis probe having a supply line and a drainage line for a drip-feed solution and a dialysis section arranged generally therebetween. ~~Correspondingly, it is the object of the present invention to propose a dialysis probe which overcomes the above cited disadvantages of the prior art.~~ The dialysis probe is configured such that solution flowing from the supply line to the drainage line experiences an inversion in flow in the area of the dialysis section. Thus, the dialysis probe of the present invention provides ~~In particular, a~~ stable flow guidance and thus a fast adjustment of the equilibrium ~~are to be guaranteed~~. Further, in the dialysis probe of the present invention, ~~Moreover, it is to be avoided that~~ flow-impeding dead spaces in the dialysis section and in the supply line ~~lines~~ and drainage line ~~lines~~ are substantially avoided.

Please delete paragraph [0008].

Please replace paragraph [0009] with the following:

The supply line and drainage line are ~~thus~~ arranged generally side by side in accordance with the invention, not one inside the other as in the prior art. Thus, ~~both~~ the supply line and the drainage

line ~~each form a part of the outer wall~~ together form a probe and can thus, through their own structure or by providing protective devices formed thereover ~~over the corresponding channels~~, be stably developed such that mechanical influences do not impede the flow of the drip-feed solution. While in the prior art, for example in accordance with DE 33 42 170 C2, pressure on the outer hollow cylinder (i.e., the drainage line) automatically affects the supply line within it, ~~this is no longer critical in~~ outside pressure on the probe does not similarly affect the supply line and drainage line ~~arranged side by side in accordance with~~ of the invention.

Please replace paragraph [0020] with the following:

Figure 1 ~~FIG. 1~~ illustrates a perspective view of a longitudinal section of ~~a first embodiment of~~ a micro-dialysis probe in accordance with a first embodiment of the present invention~~, in a longitudinal sectional view with two cross-sectional views; and~~.

Please insert the following new paragraphs between paragraphs [0020] and [0021]:

Figure 2 illustrates a cross-sectional view of the embodiment of Figure 1, taken along A-A of Figure 1.

Figure 3 illustrates a cross-sectional view of the embodiment of Figure 1, taken along B-B of Figure 1.

Please replace paragraph [0021] with the following:

Figure 4 ~~FIG. 2~~ illustrates a perspective view of a longitudinal section of ~~a second embodiment of~~ a micro-dialysis probe in accordance with a second embodiment of the present invention~~, in a longitudinal sectional view with four cross-sectional views~~.

Please insert the following new paragraphs after paragraph [0021] and before the Detailed Description section.

Figure 5 illustrates a cross-sectional view of the embodiment of Figure 4, taken along C-C of Figure 4.

Figure 6 illustrates a cross-sectional view of the embodiment of Figure 4, taken along D-D of Figure 4.

Figure 7 illustrates a cross-sectional view of the embodiment of Figure 4, taken along E-E of Figure 4.

Figure 8 illustrates a cross-sectional view of the embodiment of Figure 4, taken along F-F of Figure 4.

Please replace paragraph [0022] with the following:

Figure 1 illustrates a ~~The~~ micro-dialysis probe ~~shown in FIG. 1~~ in accordance with a first embodiment of the present invention. The micro-dialysis probe extends longitudinally between a proximal probe opening and a distal probe tip. A supply line 1, or ~~consists of~~ a supply channel, ~~namely a supply line 1~~, is provided through which the drip-feed solution is introduced into the probe. A drainage line 6, formed by a hollow fiber 4, is provided for draining the drip-feed solution from the probe. A tube 11 may be provided surrounding the drainage line 6 for supporting the drainage line 6. The hollow fiber 4 is may be formed to be replaceable, and correspondingly sealed in, the tube 11. The supply line 1 and drainage line 6 are arranged substantially side-by-side and together form the probe shaft of the micro-dialysis probe. At the distal probe tip ~~On its other side~~, the probe is sealed and pointed with a sealing material 13, to enable it to be introduced into subcutaneous tissue. In the vicinity of the probe tip ~~of the probe~~, a dialysis opening 10 is provided in the supply line 10. The ~~the~~ hollow fiber 4 penetrates from above into the dialysis ~~an~~ opening 10 of the supply line 1. Flow ~~This flow~~ connection between

the supply line 1 and the hollow fiber 4 is thus formed with the aid of the shaping of the sealing material, such that the flow can be inverted without being substantially impeded. The ~~On the other hand, the~~ hollow fiber 4 in the area ~~surroundings~~ of the opening 10 is sealed ~~in~~ with ~~the aid of~~ the sealing material such that there is no leakage. Thus, the drip-feed solution flows through the whole cross-section of the dialysis hollow fiber in one direction and is introduced in the drainage line linearly without a change in direction. The flow direction is here inverted to enable the liquid to be supplied and drained from one side, before it enters the dialysis hollow fiber, such that the dialysis itself is not impeded by disturbances in the flow.

Please replace paragraph [0023] with the following:

In the area of the flow inversion, a dialysis section is formed. ~~After the flow has been inverted, the hollow fiber 4 forms the dialysis section~~. To form the dialysis section ~~To this end~~, the tube 11 surrounding the drainage line 6 is provided with recesses 5 in the area of the cross-sectional view of Figure 2 ~~cross-section shown on the left~~, such that the hollow fiber 4 is here exposed to the surrounding tissue and dialysis can take place. The supply line 1, and the supporting section of the tube 11 arranged on the opposite side of the hollow fiber 4 parallel to the supply line 1, form an outer framework which mechanically shields the hollow fiber 4 from the surrounding matrix of tissues without preventing direct liquid contact between the hollow fiber 4 and the surrounding medium. The supply line 1 and the drainage line 6 may be formed as separate parts, connected firmly at the distal probe tip and the proximal probe opening. However, in a preferred embodiment, the supply line 1 and the drainage line 6, having a flow connection, or dialysis section, near their tip, are integrated in a single piece.

Please replace paragraph [0025] with the following:

In its further course towards ~~the right end of the drainage line 6~~ the proximal probe opening, opposite the probe tip, the hollow fiber 4 is ~~then~~ again ~~completely~~ surrounded by the tube 11, as shown in the cross-sectional view of Figure 3 ~~follows from the cross-section shown on the right~~.

In this area, the hollow fiber ~~it~~ is sealed by ~~means of~~ a carrier material (shown in grey) in the tube 11. The supply line 1 and the drainage line 6 with the surrounding tube 11 are fixed to one another ~~each other~~ in this area using the fixing material 9 ~~which is most easily recognized~~, shown in Figure 3 ~~in the cross-section shown on the right~~. The dialysis probe thus forms an integral unit.

Please insert the following new paragraph between paragraph [0026] and paragraph [0027]:

Figure 4 illustrates a micro-dialysis probe of the present invention in accordance with a second embodiment. The flow channel for the drip-feed solution consists of a hollow fiber 8 with a supporting profile 2 inserted into it which separates the supply line 1 and the drainage line 6 from one another, the supporting profile 2 having at least one opening 7 in the area of flow inversion. The supply line 1 and drainage line 6, together with the hollow fiber 8, form a part of the outer wall of the probe, but are separated and supported such that the flow is not impeded. The supporting function and flow guidance are assumed by the profile 2. The supporting profile 2 is thus configured such that the volume of the hollow fiber 8 through which the flow may pass consists of a number of elongated hollow spaces. These hollow spaces enable the drip-feed solution to flow into the probe tip and to be re-circulated to the other side, wherein the flow is inverted by the overflow openings.

Please replace paragraph [0027] with the following:

~~FIG. 2 shows a second micro-dialysis probe in another embodiment.~~ As shown in Figure 4 ~~In this construction~~, the supply line channel 1 and drainage line channel 6 lie, at the proximal end ~~supply line end and drainage line end~~ of the probe, opposite the probe tip, in a probe shaft 12, where inserted hoses 14 and 15 are arranged. The probe shaft 12 accommodates and continues the supply line 1 and the drainage line 6 separately. The probe shaft 12 increases stability of the micro-dialysis probe. A ~~The three-armed star-shaped~~ profile 2 is attached to the left front face of the shaft 12, over which the hollow fiber 8 is pulled and sealed at the point of attachment. As shown, the profile has a three-armed star shape. The profile may alternately be shaped as a four-

armed star or may be flat. If the profile is flat, it may exhibit a rectangular or lenticular cross-section and be provided on one or both of its flat sides with fine bristles or knobs to support the hollow fiber and maintain it at a distance. The supply line 1 and the drainage line 6 are ~~still~~ formed in the area of the shaft 12 by the shaft itself, as shown in the cross-sectional view of Figure 5 ~~follows from the cross-section view shown on the far right~~. Figure 6 is a cross-sectional view showing ~~The cross-section second from right then shows how~~ a lower supply line 1 and two upper drainage lines 6 being ~~are~~ formed by the profile 2 covered by the hollow fiber 8. The supply line 1 and the drainage line 6 are separated from one another ~~each other towards the tip area up to the front,~~ and extend generally in ~~run~~ parallel. At the point of the micro-dialysis proe shown in Figure 7, ~~The cross-section second from left then shows that~~ the center ~~middle piece~~ of the profile 2 is left open ~~at this point~~, such that an overflow opening 7 is created through which the drip-feed liquid can flow from the supply line 1 into the drainage lines 6, thereby creating a primary dialysis section. Thus, in this embodiment, flow inversion takes place here. Of course, the overflow opening can be formed at a different point in the micro-dialysis probe and need not correspond exactly with the cross-sectional point of Figure 7. The profile is sealed together with the hollow fiber at the tip by a sealing material 13, as can be seen in Figure 8 ~~in the cross-section on the left~~. After passing ~~Having passed~~ the overflow opening 7, the drip-feed liquid ~~then~~ flows into ~~back in~~ the two drainage lines 6, which re-unite in the area of the shaft. ~~Here, too, the~~ As shown, the supply line and the drainage lines run side by side and are supported from within by the profile 2, such that impedance of the flow through external influences is substantially prevented ~~can be largely ruled out~~. In the embodiment shown, ~~Furthermore, it is also clear in this example that~~ the flow is substantially linear and is guided in a generally straight line ~~over wide stretches~~, such that dead spaces and the impedance of the flow and delays in adjusting the equilibrium associated therewith ~~connected with them~~ are substantially avoided.

Please insert the following new paragraph between paragraph [0027] and paragraph [0028]:

As discussed above, the profile may be formed in any suitable shape, for example as a three or four-armed star or as flat with a rectangular or lenticular cross-section. A star-shaped profile is preferred as it achieves high mechanical stability. Using a four-armed star profile, the drip-feed

solution is guided in two parallel channels as the supply line, and two parallel channels as the drainage line. Using a three-armed star profile, the stretching of the hollow fiber material caused by swelling may be compensated for, if the dry hollow fiber is moved taut over the profile and appears in cross-section as a triangle with rounded corners. When the hollow fiber membrane is stretched, a circle cross-section is again formed. In the three-armed star embodiment of the profile, a single supply line and two drainage lines are provided. As the hollow fiber is supported from within, it may be exposed to the matrix of tissues along its entire length. Dialysis then takes place both in the supply line as well as in the drainage lines.

Please replace the Abstract with the following:

~~The invention relates to a~~ A micro-dialysis probe extending longitudinally between a proximal probe opening and a distal probe tip and having ~~which includes~~ a supply line ~~(1)~~ and a drainage line ~~(6)~~ for a drip-feed solution. A tube may be provided for supporting the drainage line. A ~~and a~~ dialysis section, wherein the flow channel for the drip-feed solution experiences an inversion, is formed generally ~~in the area of the dialysis section~~ between the supply line ~~(1)~~ and the drainage line, in the vicinity of the distal probe tip. ~~(6), and wherein both the~~ The supply line ~~(1)~~ and the drainage line ~~(6)~~ are ~~respectively~~ arranged substantially side by side and together form the probe shaft of the micro-dialysis probe. ~~as separate hollow channels on the outer wall of the probe, side by side, in particular parallel.~~